Engaging with the pragmatics of relational thinking, leverage þÿ p o i n t s a n d t r a n s f o r m a t i o n s R e p l y t o W e s t e t a l

Raymond, Prof. Christopher

2021-01-13

Raymond , P C , Kaaronen , R O , Giusti , M , Linder , N & Barthel , S 2021 , ' Engaging with þÿ t h e p r a g m a t i c s o f r e l a t i o n a l t h i n k i n g , l e v e r a g e p o i n t s a n d t r a n s f o r m a t i al. ' , Ecosystems and people , vol. 17 , no. 1 . https://doi.org/10.1080/26395916.2020.1867645

http://hdl.handle.net/10138/325644
https://doi.org/10.1080/26395916.2020.1867645

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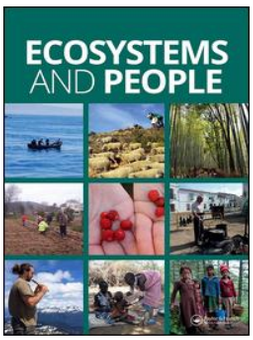

Ecosystems and People

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tbsm22

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To cite this article: Christopher M. Raymond , Roope Kaaronen , Matteo Giusti , Noah Linder & Stephan Barthel (2021) Engaging with the pragmatics of relational thinking, leverage points and transformations – Reply to West et al., Ecosystems and People, 17:1, 1-5, DOI: 10.1080/26395916.2020.1867645

To link to this article: https://doi.org/10.1080/26395916.2020.1867645

Published online: 13 Jan 2021.

ECOSYSTEMS AND PEOPLE
2021, VOL. 17, NO. 1, 1–5
https://doi.org/10.1080/26395916.2020.1867645

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SHORT COMMUNICATION

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Engaging with the pragmatics of relational thinking, leverage points and transformations – Reply to West et al.

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ABSTRACT

We reply to 'A relational turn for sustainability science?' by West et al. We commend West et al. for their salient comments about the relational turn. Yet the article leaves us wondering about the methodological challenges and pragmatics of relational thinking. The authors omitted important tensions in relational thinking discussion about how to assess dynamic socio-ecological systems, and how to lever change for sustainability. Whilst relational thinking is helpful, researchers inevitably need to make strategic choices about where to divide system components if the goal is to systematically assess relations and to promote transformations toward sustainability. Where and how to 'apply the knife' inevitably is informed by one's ontological starting point (view of reality) and personal epistemological beliefs. We outline three questions to be answered in order to more firmly establish relational thinking in sustainability science: If systems and processes are continually unfolding, how do we identify where to lever change for sustainability? In relational thinking, can we explain human action outside of the shared 'activity of experiencing'? If society and ecology is co-constituted, how can relational approaches be used to understand unfolding and cascading effects in complex systems? We conclude with future directions for a solutions-oriented sustainability science agenda.

ARTICLE HISTORY
Received 24 November 2020
Accepted 17 December 2020

EDITED BY
Alexander van Oudenhoven and Maraja Riechers

KEYWORDS
Relational thinking; socio-ecological systems; transformations; leverage points; relational values; multiple values of nature; SDG11 sustainable cities and communities < UN sustainable development goals; SDG13 climate action < UN sustainable development goals; SDG17 partnerships to achieve the goal < UN sustainable development goals

We commend West et al. (2020) for a succinct discussion of the 'relational turn' and the importance of a 'paradigm shift' in sustainability science from assessing interactions between entities to an exploration and examination of continually unfolding processes and relations. The authors eloquently discuss the differences between dualistic, coupled social-ecological systems and more relational perspectives on human-environment dynamics, and make the case for a relational sustainability science agenda geared towards understanding: 1) continually unfolding processes, 2) embodied experience, 3) relational language and concepts and 4) ethics/practices of care. The authors of this reply come from a diversity of theoretical perspectives. We embrace place-based valuation, sense of place, social-ecological systems research, ecological psychology, behavioural sciences and sustainability transformations as starting points. We are guided by post-normal science and epistemological pluralism, which suggests there is no one correct way of conceptualising, assessing and integrating the complexity of social, ecological and technological phenomenon core to an understanding of sustainability (Funtowicz and Ravetz 1993). As sustainability science scholars, we all need to be reflexive about the value, epistemic and procedural lenses of worth associated with a given theoretical tradition (Raymond et al. 2019), and to be open to the tensions between theoretical traditions (Kenter et al. 2019). By respecting this plurality we can bring more diverse voices and understandings into scholarly and applied discussions about how we can support rapid transformations toward sustainability. Hence, a pragmatic, plural and solutions-oriented approach toward sustainability science.

Relational thinking, like any theoretical perspective, makes important assumptions about human-nature relationships. We are concerned that West et al. omitted important tensions in relational thinking discussion about 'How can we operationalise aspects of relationality if objects and subjects are dynamically co-constituted?' Any theoretical tradition needs to set system boundaries and this inevitably leads to brightspots and blindspots. As novelist and relational philosopher Robert M. Pirsig writes in Zen and the Art of Motorcycle Maintenance, 'When analytic thought, the knife, is applied to experience, something is always killed in the process'. However, as Pirsig

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notes, it is equally true that one cannot go about thinking analytically without applying 'the knife' (Pirsig 1999/1974, Ch7). How we set system boundaries is inevitably is informed by one's ontological starting point (view of reality) and personal epistemological beliefs (Raymond et al. 2010; Moon and Blackman 2014), collectively referred to as epistemic worldviews (Kenter et al. 2019). For example, social-ecological systems theory draws upon complex adaptive systems (Colding and Barthel, 2019); ecological psychology theory often draws on the concept of affordances to describe dynamic perception-action processes where mind and bodily action are co-constituted (Kaaronen 2017; Raymond et al. 2017a), and; more contemporary understandings of sense of place refer to the fluidity of people-place relations, including the dynamic relations between materiality, practices and interrelated social-spatial processes (Cresswell 2015; Di Masso et al. 2019). At the science-policy interface, multiple, overlapping and sometimes competing perspectives on relationality emerge (Hakkarainen et al. 2020), leading to important questions about how to integrate, complement or converge evidence drawn from diverse knowledge systems (Turnhout et al. 2020) and diverse values of nature (Norton 2017).

However, in each of these cases, it is equally notable that the relations are defined and communicated in practice as relations between things and processes. Even relational philosophies such as those found in ecological psychology end up speaking of the relations between organisms and environments at different analytical scales of affordances, behaviour settings or social institutions (Heft 2014). Many relational programmes inevitably have to resort to analytical language that logically separate the target of study from other worldly processes. Indeed, it is no coincidence that since their development, relational philosophies such as process philosophy have usually co-developed with pragmatism (Rescher 1996). After all, the causality underlying any natural 'processes' or 'relations' can be traced temporally and spatially to (literally) astronomical scales. It is the task of the scientist to set system boundaries, and justify the separation of one system from another. Notably, this does not only pertain to common bifurcations such as human-versus-environment, but also to any holistic phenomena studied (e.g. 'care' or 'experience' as proposed by West et al.), as even they have to be cut out from larger-macro processes. Where we perhaps depart from West et al. is that we do not perceive this as impeding progress in relational sustainability science. Rather, in practice, the questions that ultimately emerge are methodological. Our emphasis in this reply is that sustainability scientists also need to be solutions-oriented (Miller et al. 2014; Frantzeskaki et al. 2019; Watts et al. 2017), and the strengths and limitations of a new 'paradigm' is also measured in how it is able to respond to some of the urgent aspects of the Anthropocene. Therefore, when considering to embrace relational ontologies, it is important to ask how they contribute to our understanding of social-ecological dynamics and the methodologies to study them. Here, we yet identify plenty of work to be done, and some important tensions that need to be resolved.

1) If systems and processes are continually unfolding, how do we identify where to lever change for sustainability?

Meadows' (1999) concept of 'leverage points' has undeniably had great influence on recent advances in sustainability science, and it is invaluable as a heuristic for locating interventions. The problems with relational philosophies in this context arise from the fact that to actually empirically study, even more so model a 'leverage point' or 'paradigm shift', analytical 'bifurcations' will be necessary. Even holistic and relational approaches such as 'generative social science' (a field of social science which seeks to explain social phenomena by 'growing' them, usually computationally) (Epstein 2006) require first defining and indeed formalising the system of interest. For example, Agent-Based Modelling, a method born from complexity science and ideal for modelling relations between agents (e.g. organisms) and environments as well as for locating 'leverage points' in complex systems (Kaaronen and Strelkovskii 2020), has to begin by analytically separating the agent from the environment so as to formally define their interactions. Whilst the emergent relations between agents and environments can have surprising and insightful qualities, the study of such a system cannot commence without some degree of applying 'the knife' in distinguishing agents from environments. The same applies, to our knowledge, to most methods suitable for studying dynamical systems, which West et al. define as main targets of interest for relational sustainability science. An important question therefore arises: how can relational ontologies, in practice, aid in identifying leverage points or indeed assist in modelling them? For a solutions-oriented sustainability science, these are important questions that yet remain to be answered compellingly.

2) In relational thinking, can we explain human action and impact outside of the shared 'activity of experiencing'?

West et al. highlight the important role of multiple modes of experience in relational thinking, and the situatedness of knowledge production. In doing so they encourage a move away from the creation of concepts and categories of meaning, to recognising the dynamic and unfolding connections between the mind, body and the environment through the shared 'activity of experiencing'. Moving away from the internal world of cognition to situated experiences has much merit. Most models relying on the motivational basis of pro-environmental behaviour usually offer weak to moderate explanatory effect. A meta-review indicates that over 79% of the variance in the association between self-reported and objective behaviour remains unexplained (Kormos and Gifford 2014). Furthermore, we have little knowledge of

the relative influences of the different factors on behaviour and across situations (Gifford and Nilsson 2014). However, most operational models of relational thinking are limited to explaining the activity of experiencing by individuals and groups within their behavioural setting (see Raymond et al. 2017a). How to explain unfolding and inherently unpredictable process of change beyond the purview of the individual and group within a given setting is challenging. Equally challenging is the question of generalisability: 'Can behaviour found in one behaviour setting be used to understand another?' By loosening some of the restrictions on relational thinking we can begin to develop new methods for understanding elements of relational processes West et al. refer to; for example, by including people's relationships with the living environment and their immediate culture in social-ecological systems analyses (Giusti et al. 2014; Giusti 2019). To explain the complex interrelationships between social, ecological and technological systems that occur at different geographic scales, arguably we need to draw upon multiple sensing systems, each grounded in their own ontological assumptions.

We also need to engage with the 'so what' question in relational thinking. i.e. how do we realise transformations toward sustainability in a narrow window of 10–15 years (Stoknes 2015). Focusing on existing modes of experience may not lead to the rapid and societal wide changes in behaviour necessary for ecological and human well-being. With this goal in mind, a more pragmatic approach for relational thinkers might be to 'cut out system boundaries' in different ways and from different theoretical starting points in order to learn more about the relational features and processes that directly shape and change human behaviour. The big question that remains, though, is how valuable such redefinitions of systems boundaries are in practice: do they really help us locate leverage (or tipping) points for sustainability?

3) If society and ecology is co-constituted, how can relational approaches be used to understand unfolding and cascading effects in complex systems?

We agree with West et al. that leverage points are currently geared towards assessing direct and indirect drivers of change, but in what ways could relational approaches be used to assess unfolding processes in complex systems? Part of the answer may exist in studying actual human behaviour as opposed to behavioural motivations (building on Sörqvist 2016). For example, how actual behaviour is changed by altering the design of urban environments, and in turn, how new behaviours affect the mindsets of others. This level of dynamical recursion is a core argument behind the concept of 'extinction of nature experience' (Pyle 1993), emerging literature in sustainable social-ecological urbanism (Giusti and Samuelsson 2020), and regenerative design (Naboni et al. 2019). From this perspective, any given intervention in the system can have cascading effects on environmental change, motivation and perception (Giusti and Samuelsson 2020). To assess these effects, one option could be to study what Lewin (2013/1932) called 'whole situations', studying the emergence of situated behaviours in realistic context. However, for a researcher, this is a daunting task, and will require new multi- or mixed-method approaches for comparing and where possible integrating the situatedness of behaviour and motivation and processes of cognitive abstraction beyond a given setting.

Conclusion

In conclusion, whilst relational thinking is a helpful tool, it is not (yet) alone fleshed out enough to provide alternatives for the methodological frameworks they seek to replace. We therefore urge a more pragmatic approach whereby we combine established theory on relational thinking with theory and methods from other system understandings, and be discerning about the strengths and limitations of each. We also require new forms of processes for promoting reflexivity and dialogue across different ways of understanding relationality with the goal of building convergence, recognising that no single evaluative model can provide a comprehensive accounting of all aspects of relationality (building on Norton 2017). Our major question to relational philosophy therefore is: what is the theoretical starting point for understanding relationality, and can each starting point provide methodological alternatives for studying system change that are more efficient than existing (even dualistic) ones? And if not, how far, as sustainability scientists, can we truly become solutions-oriented? Solution-orientated sustainability science necessarily involves building a shared understanding of the societal challenge(s) across diverse stakeholder groups; developing methods for envisioning sustainable futures; and co-creating solutions that not only align with the desired future but also meet research, planning and fiscal timelines (Miller et al. 2014; Frantzeskaki et al. 2019). The evaluation of the co-benefits and costs of any given solution is transversal to the design and implementation process (Raymond et al. 2017b; Frantzeskaki et al. 2019) and requires focusing on decision contexts that have specific, well-defined properties (Watts 2017). In this digital age, new methods are needed for assessing the interconnected effects of a proposed solution on social, ecological and technological systems and for managing the varying types of socio-technical changes that may constrain or promote transformations toward sustainability (Colding and Barthel 2017; McPhearson 2020). Multiple forms of sensing data collated using geographic information observatories, including data on sense of place, planning preferences and behavioural patterns, will play an increasing role in these efforts. Moreover, solutions

orientation necessarily involves assigning greater attention to the agentic capacities of institutions to support relational thinking and transformations toward sustainability.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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References

Colding J, Barthel S. 2017. An urban ecology critique on the "Smart City" model. J Clean Prod. 164:95–101. doi:10.1016/j.jclepro.2017.06.191.

Colding J, Barthel S. 2019. Exploring the social-ecological systems discourse 20 years later. Ecol Soc. 24. doi:10.5751/ES-10598-240102.

Cresswell T. 2015. Place: an introduction. Oxford: Wiley Blackwell.

Di Masso A, Williams DR, Raymond CM, Buchecker M, Degenhardt B, Devine-Wright P, Hertzog A, Lewicka M, Manzo L, Shahrad A, et al. 2019. Between fixities and flows: navigating place attachments in an increasingly mobile world. J Environ Psychol. 61:125–133. doi:10.1016/j.jenvp.2019.01.006.

Epstein JM. 2006. Generative social science: studies in agent-based computational modeling. New Jersey: Princeton University Press.

Frantzeskaki N, McPhearson T, Collier MJ, Kendal D, Bulkeley H, Dumitru A, Walsh C, Noble K, van Wyk E, Ordóñez C, et al. 2019. Nature-based solutions for urban climate change adaptation: linking science, policy, and practice communities for evidence-based decision-making. BioScience. 69(6):455–466. doi:10.1093/biosci/biz042.

Funtowicz SO, Ravetz JR. 1993. Science for the post-normal age. Futures. 25:739–755. doi:10.1016/0016-3287(93)90022-L.

Gifford R, Nilsson A. 2014. Personal and social factors that influence pro-environmental concern and behaviour: A review. Int J Psychol. doi:10.1002/ijop.12034.

Giusti M. 2019. Human-nature relationships in context. Experiential, psychological, and contextual dimensions that shape children's desire to protect nature. PLoS One. 14:e0225951. doi:10.1371/journal.pone.0225951.

Giusti M, Barthel S, Marcus L. 2014. Nature routines and affinity with the biosphere: a case study of preschool children in stock. Child Youth Environ. 24:16. doi:10.7721/chilyoutenvi.24.3.0016.

Giusti M, Samuelsson K. 2020. The regenerative compatibility: A synergy between healthy ecosystems, environmental attitudes, and restorative experiences. PLoS One. 15:e0227311. doi:10.1371/journal.pone.0227311.

Hakkarainen V, Anderson CB, Eriksson M, van Riper CJ, Horcea-Milcu A, Raymond CM. 2020. Grounding IPBES experts' views on the multiple values of nature in epistemology, knowledge and collaborative science. Environ Sci Policy. 105:11–18. doi:10.1016/j.envsci.2019.12.003.

Heft H. 2014. What makes an ecological psychology ecological? MERA J. 16:11–16. doi:10.20786/mera.16.2_11.

Kaaronen RO. 2017. Affording sustainability: adopting a theory of affordances as a guiding heuristic for environmental policy. Front Psychol. 8:1974. doi:10.3389/fpsyg.2017.01974.

Kaaronen RO, Strelkovskii N. 2020. Cultural evolution of sustainable behaviors: pro-environmental tipping points in an agent-based model. One Earth. 2:85–97. doi:10.1016/j.oneear.2020.01.003.

Kenter JO, Raymond CM, van Riper CJ, Azzopardi E, Brear MR, Calcagni F, Christie I, Christie M, Fordham A, Gould RK, et al. 2019. Loving the mess: navigating diversity and conflict in social values for sustainability. Sustain Sci. 14:1439–1461. doi:10.1007/s11625-019-00726-4.

Kormos C, Gifford R. 2014. The validity of self-report measures of proenvironmental behavior: a meta-analytic review. J Environ Psychol. doi:10.1016/j.jenvp.2014.09.003.

Lewin K. 2013. Principles of topological psychology. Redditch, Worcestershire, UK: Read Books Ltd.

McPhearson T. 2020. Transforming cities and science for climate change resilience in the anthropocene. In: Hölscher K, Frantzeskaki N, editors. Transformative climate governance. Palgrave studies in environmental transformation, transition and accountability. Cham: Palgrave Macmillan; p. 99-111. doi:10.1007/978-3-030-49040-9_3.

Meadows DH. 1999. Leverage points: places to intervene in a system. Hartland (WI): The Sustainability Institute.

Miller TR, Wiek A, Sarewitz D, Robinson J, Olsson L, Kriebel D, Loorbach D. 2014. The future of sustainability science: a solutions-oriented research agenda. Sustainability Sci. 9:239–246. doi:10.1007/s11625-013-0224-6.

Moon K, Blackman D. 2014. A guide to understanding social science research for natural scientists. Conserv Biol. 28(5):1167–1177. doi:10.1111/cobi.12326.

Naboni E, Natanian J, Brizzi G, Florio P, Chokhachian A, Galanos T, Rastogi P. 2019. A digital workflow to quantify regenerative urban design in the context of a changing climate. Renew Sustain Energy Rev. 113:109255. doi:10.1016/j.rser.2019.109255.

Norton BG. 2017. A situational understanding of environmental values and evaluation. Ecol Econ. 138:242–248. doi:10.1016/j.ecolecon.2017.03.024.

Pirsig RM. 1999. *Zen and the art of motorcycle maintenance: an inquiry into values*. New York, United States: Random House.

Pyle R. 1993. The thunder tree: lessons from an urban wildland. Boston (MA): Houghton Mifflin.

Raymond C, Giusti M, Barthel S. 2017a. An embodied perspective on the co-production of cultural ecosystem services: toward embodied ecosystems. J Environ Plan Manag. 61:778–799. doi:10.1080/09640568.2017.1312300.

Raymond CM, Fazey I, Reed MS, Stringer LC, Robinson GM, Evely AC. 2010. Integrating local and scientific knowledge for environmental management. J Environ Manage. 91:1766–1777. doi:10.1016/j.jenvman.2010.03.023.

Raymond CM, Frantzeskaki N, Kabisch N, Berry P, Breil M, Nita MR, Geneletti D, Calfapietra C. 2017b. A framework for assessing and implementing the co-benefits of nature-based solutions in urban areas. Environ Sci Policy. 77:15–24. doi:10.1016/j.envsci.2017.07.008.

Raymond CM, Kenter JO, van Riper, CJ, Rawluk, A., Kendal, D. 2019. Editorial overview: theoretical traditions in social values for sustainability. Sustainability Sci. 14:141173–1185. doi:10.1007/s11625-019-00723-7

Rescher N. 1996. Process metaphysics: an introduction to process philosophy. Albany, NY: State University of New York Press.

Sörqvist P. 2016. Grand challenges in environmental psychology. Front Psychol. 7:583. doi:10.3389/fpsyg.2016.00583.

Stoknes P. 2015. What we think about when we try not to think about global warming-towards a new psychology of climate action. Vermont (USA): Chelsea Green Publishing.

Turnhout E, Metze T, Wyborn C, Klenk N, Louder E. 2020. The politics of co-production: participation, power, and transformation. Curr Opin Environ Sustain. 42:15–21. doi:10.1016/j.cosust.2019.11.009.

Watts D. 2017. Should social science be more solution-oriented? Nat Hum Behav. 1:0015. doi:10.1038/s41562-016-0015.

West S, Haider LJ, Stålhammar S, Woroniecki S. 2020. A relational turn for sustainability science? Relational thinking, leverage points and transformations. Ecosyst People. 16:304–325. doi:10.1080/26395916.2020.1814417.